

CLAIMS

1. An engineered yeast cell, comprising a transgene encoding one or more amyloidogenic proteins or mutant(s) thereof, wherein said yeast strain is
5 characterized in that it lacks one or more functional genes responsive to oxidative stress.
2. The engineered yeast cell according to claim 1, wherein the one or more amyloidogenic proteins or mutant(s) thereof are encoded by a minigene.
- 10 3. The engineered yeast cell according to claim 1, wherein said one or more functional genes responsive to oxidative stress is a gene encoding a caspase.
- 15 4. The engineered yeast cell according to claim 3, wherein said caspase is yeast caspase Yca1.
5. The engineered yeast cell according to claim 1 or 2, wherein said amyloidogenic protein is alpha-synuclein.
- 20 6. The use of the engineered yeast cell according to any of claims 1 to 5, as a model for amyloidoses.
7. The use according to claim 6, wherein the amyloidoses causes Parkinson's
25 disease or Lewy body disease.
8. The use of the engineered yeast cell according to any of claims 1 to 5, for screening compounds capable of affecting the toxicity of amyloidogenic proteins in yeast.
- 30 9. A method for identifying a compound which influences the toxic effect of amyloidogenic proteins in yeast, said method comprising the steps of:

- a) providing an engineered yeast strain, comprising a transgene or a minigene encoding one or more amyloidogenic proteins or mutant(s) thereof, wherein said yeast strain is characterized in that it lacks one or more functional genes responsive to oxidative stress,
- 5 b) contacting the yeast strain obtained in step (a) with said compound, and
- c) determining the phenotypic effect of said compound on said yeast.
10. The method according to claim 9 wherein step b) is performed in a medium comprising metal ions.
- 10 11. The method according to claim 9 or 10, wherein said one or more functional genes responsive to oxidative stress response is a gene encoding a caspase.
- 15 12. The method according to claim 11, wherein said caspase is yeast Yca1.
13. The method according to any one of claims 9 to 12, wherein said amyloidogenic protein is alpha-synuclein.